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States Indian Service, shows that they are badly diseased. Of 64 examined the following cases were found: tracoma, 27; consumption, 5; goiter, 3; enlarged glands, 2; arterio-sclerosis, 1.

The division of the Goshute tribe living at Deep Creek reservation numbers about 150. They are progressive and self-supporting.

BIRDS OF THE BOIS FORT INDIAN RESERVATION AND ADJACENT TERRITORY IN MINNESOTA.

ALBERT B. REAGAN.

THE BOIS FORT (or Nett Lake) Indian reservation, surrounding the beautiful Nett lake, is the home of the Bois Fort Indians. It covers one whole township and eight fractional townships. Its eastern part is in St. Louis county, the bulk in Koochiching county, covering townships and parts of townships as follows: townships 66 north, ranges 21, 22 and 23 west of the fourth principal meridian in Minnesota; also townships 65 and 64, same ranges as above. The reservation is located 125 miles northwest of Duluth and about 38 miles south of Fort Frances, Ontario. It contains a total of 103,862.73 acres, exclusive of the area of the lake, which comprises about three-fourths of a township. Of this about 56,000 acres are allotted to 718 Indians and 434.64 acres are reserved for agency and school purposes. Of the 47,428.09 acres unallotted, much of it was originally reserved by the government as pine lands, aggregating 9,533.93 acres; the remaining unallotted area was mostly swamp land. In 1909 the last of the pine was sold, and in 1914 practically all of the unallotted land was thrown open for settlement. Of the allotted land, more than one-half of the original allottees are dead. Consequently, something like 30,000 acres of inherited Indian lands will be sold within the next few years.

Nett lake is in the east central part of the reservation. As has been stated, it covers about three-fourths of a township. It is in the shape of a giant lobster's hand, with the claws pointing eastward, the larger claw being the north digit. The lake is shallow and has a mud bottom. It is a rice field and a duck pond combined. In summer it looks like a vast wheat field. In

the fall it swarms with ducks, and consequently is a sporting center for hunters of all that northern country.

The lands included in the reservation are well timbered. The principal species represented are white and Norway pine, spruce, cedar, elm, cottonwood, oak, maple, willow, various species of plums and cherries, birch and poplar.

The land is very variable in condition of soil and possible fertility. One-half of it is swamp and is known to the Indians as "muskeg" lands. Over this area is a stratum of peat from six inches to five feet in thickness. When once drained this will make the best of land. The nonswamp eastern part of the reservation is composed of rock ridges flanked with lower land. These lower stretches are clay flats covered with black loam. On these grow birch and poplar forests. The ridges are pine lands, and in the future will not be of much value except for building sites and orchard locations. The swamp areas are in the jungle state.

The western part of the reservation that is not covered with "muskeg" swamp is a sand region. On it grew much pine in the old times, but when cleared it will be practically worthless, as are some pine lands east of the south lobe of the lake.

The region about Little Fork river, in the southwestern part of the reservation, will make good farm land when cleared. Some open areas are fine meadows now.

The climate is very changeable, ranging from 102 degrees above zero in summer to 60 below in winter. There is a heavy snowfall in winter and an abundance of rain in summer.

The Indians have been allotted for twenty-five years, yet only a few have ever attempted to improve their allotments. There is rice growing in the lake and plenty of game in the woods and waterfowl among the rice in the lake.

As is seen, the region about Nett lake is in the virgin state. The same might be said of all the region extending southward and eastward nearly to Duluth and Lake Superior, and northward to the Arctic ocean, much of which is composed of swamps and lakes.

The above is given in order that the reader may have an idea of the character of the country about Nett lake and the birds to expect in the region and the conditions under which these birds make homes in the section.

The writer will add that Nett lake is eighteen miles west of the Orr railroad station of the Duluth, Winnepeg & Pacific railroad, running out from Duluth, and in the fall the sportsmen from all over the coutry come to Nett lake to hunt waterfowl. For days during the hunting season wagonload after wagonload of ducks are hauled across the portage to the railway station for outgoing successful hunters. For the hunter Nett lake is a paradise.

The observations here recorded extend over a period of five years (1909-1914), as time would permit while the writer was Indian agent at Nett Lake, Minn.

Unless otherwise stated, the birds mentioned in the list below are breeding, summer residents. The number opposite the name of each respective species is the number of that species in "Handbook of Birds of Western United States," by Florence Merriam Bailey.

LIST OF SPECIES.

2. *Colymbus holboellii* (Reinh.). Holboell Grebe. Common in summer.
6. *Podilymbus podiceps* (Linn.). Pied-billed Grebe; Dadchick. Common in summer and abundant in the fall.
7. *Gavia imber* (Gunn.). Loon; Great Northern Diver. A common summer resident; abundant in migration.
9. *Gavia arctica* (Linn.). Black-throated Loon. Occasionally seen in migration.
51. *Larus argentatus* Brunn. Herring Gull. Occasionally seen at Nett lake; common at Pelican lake, Vermillion lake and Rainy and Chain lakes along the international boundary line.
There are several other species of gulls that frequent the region, but not securing a specimen, I was unable to identify them. The gulls are summer residents at Rainy lake.
120. *Phalacrocorax dilophus* (Swain.). Double-crested Cormorant. Occasionally seen in migration. In the fall of 1913 the writer saw four at Nett lake on a stormy day. They are more frequent at Pelican lake, and likely spend the breeding season at Rainy lake and other lakes in that vicinity.
125. *Pelicanus erythrorhynchos* Gmel. American White Pelican. An occasional migrant at Nett lake; a frequent migrant at Pelican lake. A stuffed pelican killed at Orr, Minn., sits on the showcase in the saloon in that town. Hunters killed five specimens near Orr in the fall of 1913.
129. *Merganser americanus* (Cass.). American Merganser; Goosander; Sheldrake. A few were seen in migration.

130. *Merganser serrator* (Linn.). Red-breasted Merganser. A rare migrant.
132. *Anas bochas* Linn. Mallard. Summer resident and migrant, abundant. The writer would judge that 100,000 passed through the region in the fall of 1913.
135. *Chaulelasmus streperus* (Linn.). Gadwell. Rare.
136. *Mareca penelope* (Linn.). Widgeon. A rare summer resident; abundant in migration.
137. *Mareca americana* (Gmel.). Baldpate. A numerous migrant.
139. *Nettion carolinensis* (Gmel.). Green-winged Teal. A summer resident and numerous migrant. The writer would judge that 75,000 passed over the reservation in the fall of 1911, stopping a few hours in the lake to get a meal of wild rice while on the trip.
140. *Querquedula discors* (Linn.). Blue-winged Teal. A summer resident and numerous migrant. The writer estimates that at least 50,000 stopped and took a meal of rice at Nett lake while on their journey south in 1910.
142. *Spatula clypeata* (Linn.). Shoveler; Spoonbill. A numerous migrant; also an occasional summer resident.
143. *Dafila acuta* (Linn.). Pintail. An abundant migrant.
144. *Aix sponsa* (Linn.). Wood Duck. In the falls of 1909, 1913, and 1914 a few wood ducks were killed by hunters at Nett lake. They were also said to be summer residents of a swampy creek region northwest of the lake.
146. *Aythya americana* (Eyt.). Redhead. A common migrant and rare summer resident.
148. *Aythya marila* (Linn.). Scaup Duck; Bluebill. The most numerous waterfowl migrant, and the bird most killed by hunters. It is also a summer resident of the region. The writer would judge that between 110,000 and 125,000 of these birds made a rest on Nett lake in their flight south in the fall of 1912.
147. *Aythya vallisneria* (Wils.). Canvasback. A common migrant and rare summer resident.
149. *Aythya affinis* (Eyt.). Lesser Scaup Duck. A common migrant and a rare summer resident.
150. *Aythya collaris* (Donov.). Ring-necked Duck. A summer resident and migrant; not abundant.
151. *Clangula clangula americana* (Bonap.). American Gold Eye. An occasional summer resident; common in migration.
153. *Charitonetta albeola* (Linn.). Buffalo Head. A migrant.
154. *Harelda hyemalis* (Linn.). Old Squaw. An occasional migrant.
155. *Histrionicus histrionicus* (Linn.). Harlequin Duck. Occasionally seen.
167. *Erismatura jamaicensis* (Gmel.). Ruddy Duck. Occasionally seen in migration.

- 171a. *Anser albifrons gambeli* (Hartl.). White fronted Goose. Common in migration.
172. *Branta canadensis* (Linn.). Canada Goose. Common in migration. While geese were often seen flying over the region, they were known to light only rarely.
190. *Botaurus lentiginosus* (Montag.). American Bittern. A summer resident.
191. *Ardetta exilis* (Gmel.). Least Bittern. But few of this species were seen.
194. *Ardea herodias* Linn. Great Blue Heron. A common summer resident.
201. *Ardea virescens* Linn. Green Heron.
294. *Grus americana* (Linn.). Whooping Crane. Seen flying in migration.
206. *Grus mexicana* (Mull.). Sandhill Crane. Seen occasionally.
212. *Rallus virginianus* Linn. Virginia Rail.
214. *Prozana carolina* (Linn.). Carolina Rail; Sora.
221. *Fulica americana* Gmel. American Coot; Mud Hen; Rice Hen. These birds visit Nett lake and Pelican lake by thousands each fall to feed on the rice. Before cold weather drives them south they get so fat they can hardly fly. When fattened on wild rice, they gain a good flavor and are hunted both by whites and Indians.
224. *Steganopus tricolor* Vieill. Wilson Phalarope.
230. *Gallinago delicata* (Ord.). Wilson Snipe; Jacksnipe. Seen about the shores of the lake in early September.
232. *Macrorhamphus scolopaceous* (Say). Long-billed Dowitcher. An occasional migrant. It was also seen May 13, 1912, on Nett river where it appeared to be a summer resident.
239. *Tringa Maculata* Vieill. Pectoral Sandpiper. A common migrant.
242. *Tringa minutilla* Vieill. Least Sandpiper. A common migrant.
256. *Helodromas solitarius* (Wils.). Solitary Sandpiper. A rare summer resident; a common migrant.
273. *Aegialitis vocifera* (Linn.). Killdeer. Occasionally met with at Nett lake; seen as a summer resident at Ely and Winton, Minn.
274. *Aegialitis semipalmata* Bonap. Semipalmated Plover. Seen as a migrant in the latter part of July and during August each year.
300. *Bonasa umbellus* (Linn.). (?) Ruffed Grouse. (?)
- 300a. *Bonasa umbellus togata* (Linn.). Canada Ruffed Grouse.
- Canachites canadensis canaa* (*Tetrao canadensis*). Spruce Hen.

The Canada ruffed grouse and the spruce hen live in the region in great numbers. In the more open areas the grouse is found; in the thickly timbered areas the spruce hen is to be seen. The latter are to be found in the balsam and pine thickets, also in the cedar jungles bordering the swampy areas.

In the blueberry season both species come out in the open and feed on berries.

The meat of the spruce hen is darker than that of the grouse and has less flavor. There are thousands of each species on the reservation. They do not migrate, but bury themselves in the snow and remain all winter.

The spruce hen is very tame and easily killed. The writer has seen them sit on a limb and never move when shot at till probably the third or fourth shot would bring them down. He has also known a flock of them to get just out of the road and sit in the open and let a team pass them. Also once while making a trip with an Indian policeman, Peter Mesabe, from the agency to Ash lake, they came upon a spruce hen in the trail. Mr. Mesabe motioned to stop, that he wished to catch the hen. The writer wondered how he was going to do it, as they had no hunting accouterments with them. Mr. Mesabe approached the bird slowly, and when he got nearly to it, probably sixteen feet of it, it flew into a nearby cedar tree and perched itself on one of the lower limbs. Mr. Mesabe then squatted in the trail and took out one of the shoestrings from his leg-boots and tied it, in snare style, on the end of a stick some four or five feet in length. He then went, in bent form, in easy and careful strides toward the tree till he got under the bird. Then he slowly pushed the stick up by the side of the bird till the shoestring noose was open and directly over the bird's head. With a quick move he got the bird's head in the noose and with another quick jerk he brought the strangling bird down. The party had spruce hen for dinner that day.

305. *Tympanuchus americanus* (Reich.). Prairie Hen. A few strays of this species were killed in the region in 1913. They are residents farther south, according to report.
- 308b. *Pedioceestes phasianellus campestris* Ridgw. Prairie Sharp-tailed Grouse. Both in the falls of 1912 and 1913 a few birds of this species were killed on the reservation. They were found in the open areas, and it is believed by the Indians that the excessive hunting in the prairie regions of Minnesota, the Dakotas and in Manitoba is driving them into the wooded districts.
316. *Zenaidura macroura* (Linn.). Mourning Dove. A common summer resident.
325. *Cathartes aura* (Linn.). Turkey Vulture. The writer saw several birds feeding at different times; also many soaring about over the region.
332. *Accipiter velox* (Wils.). Sharp-shinned Hawk.
334. *Accipiter articapillus* (Wils.). American Goshawk.
- 347a. *Archibuteo lagopus sancti-johannis* (Gmel.). Rough-legged Hawk.
349. *Aquila chrysaetos* (Linn.). Golden Eagle. Not common, but seen soaring over the region now and then. A stuffed skin of a specimen killed near Ely, Minn., is to be found at John Shafer's establishment in that city.

352. *Haliaeetus leucocephalus* (Linn.). Bald Eagle. Rarely seen.
356. *Falco peregrinus anatum* (Bonap.). Duck Hawk. This is a very common bird, both as a summer resident and a migrant.
360. *Falco sparverius* (Linn.). Sparrow Hawk.
365. *Strix pratincola* (Bonap.). Barn Owl.
373. *Megascops asio* (Linn.). Screech Owl.
- 375a. *Bubo virginianus pallescens* (Stone). Western Horned Owl. Seen occasionally.
376. *Nyctea nyctea* (Linn.). Snowy Owl. Several specimens of this species were killed at Nett lake.
387. *Coccyzus americanus* (Linn.). Yellow-billed Cuckoo.
390. *Ceryle alcyon* (Linn.). Belted Kingfisher. Occasionally seen both on Nett and Pelican lakes; quite abundant along Nett river, the outlet of Nett lake.
- 393a. *Dryobates villosus leucomelas* (Bodd.). Northern Hairy Woodpecker. A summer resident and numerous migrant; some individuals stay in the region all or most of the winter.
400. *Picoides arcticus* (Swains). Arctic Three-toed Woodpecker.
401. *Picoides americanus* (Brehm). American Three-toed Woodpecker.
402. *Sphyrapicus varius* (Linn.). Yellow-bellied Sapsucker. Common in summer; also an abundant migrant.
405. *Ceophloeus pileatus abieticola* (Bangs). Northern Pilated Woodpecker; Cock of the Woods. Common in summer; also a numerous migrant both in fall and spring.
406. *Melanerpes erythrocephalus* (Linn.). Red-headed Woodpecker.
409. *Melanerpes carolinus* (Linn.). Red-bellied Woodpecker.
- 412a. *Colaptes auratus luteus* (Bangs). Northern Flicker.
420. *Chordeiles virginianus* (Gmel.). Nighthawk. A very common summer resident.
428. *Trochilus colubris* (Linn.). Ruby-throated Humming Bird.
444. *Tyrannus tyrannus* (Linn.). Kingbird.
456. *Sayornis phoebe* (Lath.). Phoebe.
459. *Contopus borealis* (Swains). Olive-sided Flycatcher.
461. *Contopus virens* (Linn.). Wood Pewee.
- 466a. *Empidonax trailii alnorum* (Brewst). Alder Flycatcher.
467. *Empidonax minimus* (Baird). Least Flycatcher.
477. *Cyanocitta cristata* (Linn.). Blue Jay.
- 486a. *Corvus corax principalis* (Ridgw.). Northern Raven. An occasional summer resident.
488. *Corvus americanus* (Aud.). American Crow. A summer resident, but not numerous.
494. *Dolichonyx oryzivorus* (Linn.). Bobolink.
495. *Molothrus ater* (Bodd.). Cowbird.

497. *Xanthocephalus xanthocephalus* (Bonap.). Yellow-headed Blackbird. Only a few were seen.
498. *Agelaius phoeniceus* (Linn.). Red-winged Blackbird. Seen at the mouth of Nett river, May 13, 1912.
501. *Sturnella magna*. Meadow Lark.
507. *Icterus galbula* (Linn.). Baltimore Oriole. Seen in large flocks April 19, 21 and 29, 1911.
509. *Scolecophagus carolinus* (Mull.). Rusty Blackbird.
510. *Scolecophagus cyanocephalus* (Wagl.). Brewer Blackbird.
- 511b. *Quiscalus quiscula aeneus* (Ridgw.). Bronzed Grackle.
514. *Coccothraustes vespertinus*. Evening Grosbeak. An abundant migrant. First seen in large flocks April 26, 1911.
517. *Carpodacus purpureus* (Gmel.). Purple Finch.
521. *Loxi curvirostra minor* (Brehm.). Crossbill.
522. *Loxi leucoptera* Gmel. White-winged Crossbill. A rare visitor.
529. *Astragalinus tristis* (Linn.). Goldfinch.
533. *Sipinus pinus* (Wils.). Pine Siskins; Pine Finch. Birds of this species appeared in great numbers in the spring of 1911.
Passar domesticus (Linn.). English Sparrow. Just began to appear in the region.
534. *Passerina nivalis* (Linn.). Snowflake. Passed south in great numbers in the fall of 1911.
552. *Chondestes grammacus* (Say). Lark Sparrow.
554. *Zonotrichia leucophrys* (Forst.). White-crowned Sparrow. An abundant resident.
558. *Zonotrichia albicollis* (Gmel.). White-throated Sparrow. Very common, especially in migration.
567. *Junco hyemalis* (Linn.). Slate-colored Junco. Abundant winter, fall and early spring visitor.
581. *Melospiza melodia* (Wilson). Song Sparrow. Common summer resident.
583. *Melospiza lincolni* (Aud.). Lincoln Sparrow.
584. *Melospiza georgiana* (Lath.). Swamp Sparrow. A common summer resident in the swampy regions; an abundant migrant.
595. *Zamelodia ludoviciana* (Linn.). Rose-breasted Grosbeak. A rather common summer resident.
604. *Sipza americana* (Gmel.). Dickcissel.
605. *Calamospiza melancorys* Stejn. Lark Bunting. Seen in migration.
608. *Piranga erythromelas* Vieill. Scarlet Tanager. A rather common summer resident.
611. *Progne subis* (Linn.). Purple Martin.
612. *Petrochelidon lunifrons* (Say). Cliff Swallow. Seen on Little Fork river, May 21, 1912.

613. *Hirundo erythrogastra* Bodd. Barn Swallow. Seen in Little Fork Valley in May, 1912.
614. *Tachycineta bicolor* (Vieill.) White-bellied Swallow. Seen at the mouth of Nett river, May 19, 1912.
616. *Riparia riparia* (Linn.). Bank Swallow. Many burrows and nests were found along Nett river and Little Fork river in 1912, from May 5 to 19 of that year.
617. *Stelgidopteryx serripennis* (Aud.). Rough-winged Swallow. Seen in the Little Fork valley and at Big Falls on Big Fork river, in May, 1912.
619. *Ampelis cedrorum* (Vieill.). Cedar Waxwing. Common in the cedar thickets of the region.
- Perisoreus canadensis canadensis* Linn. Canada Jay. A resident throughout the year; most common in winter. They are as tame as pigeons and are known as "butcher birds" and "camp robbers." They are always found in the vicinity of lumber camps, where they feed off of the table crumbs.
- 622a. *Larius ludovicianus excubitorides* (Swain). White-rumped Shrike. A rare resident and migrant.
624. *Vireo olivaceus* (Linn.). Red-eyed Vireo.
636. *Mniotilta varia* (Linn.). Black and White Warbler.
652. *Dendroica aestiva* (Gmel.). Yellow Warbler.
654. *Dendroica caerulescens* (Gmel.). Black-throated Blue Warbler.
662. *Dendroica blackburniae* (Gmel.). Blackburnian Warbler.
667. *Dendroica virens* (Gmel.). Black-throated Green Warbler. Seen on Little Fork River, May 21, 1912.
704. *Galeoscoptes carolinensis* (Linn.). Cat Bird. Only a few birds of this species were seen.
705. *Toxostoma rufum* (Linn.). Brown Thrasher. Only a few birds of this species were seen, It is probably a resident.
728. *Sitta canadensis* Linn. Red-breasted Nuthatch.
735. *Parus artcapillus* Linn. Chickadee. A common winter resident, abundant in late fall and early spring, and possibly a few are summer residents, though no nests were found.
748. *Regulus satrapa*. Licht. Golden-crowned Kinglet. A common summer resident.
749. *Regulus calendula* (Linn.). Ruby-crowned Kinglet.
761. *Merula migratoria* (Linn.). Robin.
766. *Sialia sialis* (Linn.). Bluebird. A common summer resident.